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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,068	12/12/2001	Hiroyuki Kawai	213035US2PCT	9193

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EXAMINER

GENACK, MATTHEW W

ART UNIT	PAPER NUMBER
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2617

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/926,068

Applicant(s)

KAWAI ET AL.

Examiner

Matthew W. Genack

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-13,15-28,30-40 and 42-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-13,15-28,30-40 and 42-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>16 June 2006</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 5-9, 12-13, 15-23, 26-28, 30-31, 38-40, 42-43, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo *et. al.*, U.S. Patent No. 6,542,718, in view of Tanaka *et. al.*, U.S. Patent No. 5,339,317.

Regarding Claim 1 and 12, Kuo *et. al.* discloses a method and apparatus for terminating a burst transmission in a wireless system, said wireless system comprising a mobile unit and a base station, said burst transmission originating at said mobile unit and being received by said base station (Abstract, Column 3 Lines 16-28, Figs. 1-3). The transmission power is determined in accordance with the conditions between the mobile unit and the base station, said conditions including the degree of fading in the path between the mobile unit and the base station (Column 2 Lines 29-37, Column 7 Line 64 to Column 8 Line 7). The burst transmission is terminated or is not terminated based on a comparison involving at least one criterion pertaining to the operation of the wireless system, such as the degree of interference in the link (Abstract, Column 3

Lines 16-28, Column 8 Lines 32-41, Fig. 3). Kuo *et. al.* discloses that the serving base station sends out a burst assignment to the mobile unit whereby the length and data rate of the burst are set; the burst transmission is initiated, and it is determined whether or not the end of the data has been reached before termination of the transmission (Column 6 Lines 24-32, Fig. 3).

Kuo *et. al.* does not expressly disclose the use of a transmission waiting state in the determination of whether or not to transmit a signal.

Tanaka *et. al.* discloses a packet communication network and method wherein data is transmitted between nodes with the use of cell slots (Abstract, Column 12 Lines 20-25, Fig. 1). Each node conducts state transition processing based on the number of transmission wait-state cells in a given signal, and the transmission of said signal is based on the results of said state transition processing (Column 3 Lines 8-25).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Kuo *et. al.* by providing the ability to determine whether or not a signal is to be transmitted based on the transmission waiting state of said signal.

One of ordinary skill in the art would have been motivated to make this modification in order to increase network throughput, efficiency, fairness between nodes, and efficiency (Tanaka *et. al.*: Column 12 Lines 13-19).

Regarding Claims 2 and 13, the criterion for terminating a burst transmission may pertain to the degree of interference in the link, as outlined above.

Regarding Claims 5-6 and 16-17, Kuo *et. al.* discloses that upon the reception of a burst request by a base unit from a mobile station, an upper limit of a tolerable signal-to-interference ratio (SIR) is determined, and if the SIR that is maintained exceeds this limit, then the burst transmission is terminated (Column 3 Line 53 to Column 4 Line 3).

Regarding Claims 7-8, 18-19, and 20-22, Kuo *et. al.* discloses that the transmission power and the data rate are determined based on the minimum performance required for transmission (Column 4 Line 8 to Column 5 Line 6).

Regarding Claims 9 and 23, Kuo *et. al.* discloses that the SIR can be calculated from the mobile unit to two base stations that are within communication range of said mobile unit (Column 5 Line 62 to Column 6 Line 12).

Regarding Claims 26 and 38, Kuo *et. al.* discloses a method and apparatus for handling burst communications in a wireless system comprising at least one mobile unit and at least one base station (Abstract, Column 3 Lines 16-28, Figs. 1-2). There may be one or more base stations may communicate with a mobile unit (Column 5 Line 62 to Column 6 Line 12). Information is sent from the base station to the mobile unit (Column 8 Lines 16-19).

Kuo *et. al.* does not expressly disclose the use of a transmission waiting state in the determination of whether or not to transmit a signal.

Tanaka *et. al.* discloses a packet communication network and method wherein data is transmitted between nodes with the use of cell slots (Abstract, Column 12 Lines 20-25, Fig. 1). Each node conducts state transition processing based on the number of

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transmission wait-state cells in a given signal, and the transmission of said signal is based on the results of said state transition processing (Column 3 Lines 8-25).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Kuo *et. al.* by providing the ability to determine whether or not a signal is to be transmitted based on the transmission waiting state of said signal.

One of ordinary skill in the art would have been motivated to make this modification in order to increase network throughput, efficiency, fairness between nodes, and efficiency (Tanaka *et. al.*: Column 12 Lines 13-19).

Regarding Claims 27 and 39, Kuo *et. al.* discloses the determination of a serving base station for a particular mobile unit based on the SIR between the base station and said mobile unit (Column 5 Line 62 to Column 6 Line 15).

Regarding Claims 28 and 40, a mobile unit must be within a certain range of a base station in order to be served by said base station, otherwise signals received by said mobile unit from said base station will be below the noise floor of the receiving circuitry of said mobile unit.

Regarding Claims 29 and 41, Kuo *et. al.* discloses that the serving base station sends out a burst assignment to the mobile unit whereby the length and data rate of the burst are set; the burst transmission is initiated, and it is determined whether or not the end of the data has been reached before termination of the transmission (Column 6 Lines 24-32, Fig. 3).

In view of the 35 U.S.C. 112 rejection above (in the case of only one base station), the limitations of Claims 30-35 and 42-47 are inherent to the invention of Kuo *et. al.*

Regarding Claim 50, in view of the 35 U.S.C. 112 rejection above, Kuo *et. al.* discloses a method and apparatus for terminating a burst transmission in a wireless system, said wireless system comprising a mobile unit and a base station, said burst transmission originating at said mobile unit and being received by said base station (Abstract, Column 3 Lines 16-28, Figs. 1-3). The transmission power is determined in accordance with the conditions between the mobile unit and the base station, said conditions including the degree of fading in the path between the mobile unit and the base station (Column 2 Lines 29-37, Column 7 Line 64 to Column 8 Line 7). The base station comprises a transceiver, said transceiver transmitting and receiver signals from the mobile unit for the purposes of determining SIR (thereby determining reception quality) and the received power level (Column 4 Lines 8-32, Fig. 2). Kuo *et. al.* discloses that upon the reception of a burst request by a base unit from a mobile station, an upper limit of a tolerable signal-to-interference ratio (SIR) is determined, and if the SIR that is maintained exceeds this limit, then the burst transmission is terminated (Column 3 Line 53 to Column 4 Line 3). Power control bits are transmitted from the base station to the mobile unit, said power control bits instructing the mobile unit to transmit burst signals at a certain power level (Column 4 Lines 19-29).

Kuo *et. al.* does not expressly disclose the use of a transmission waiting state in the determination of whether or not to transmit a signal.

Tanaka *et. al.* discloses a packet communication network and method wherein data is transmitted between nodes with the use of cell slots (Abstract, Column 12 Lines 20-25, Fig. 1). Each node conducts state transition processing based on the number of transmission wait-state cells in a given signal, and the transmission of said signal is based on the results of said state transition processing (Column 3 Lines 8-25).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Kuo *et. al.* by providing the ability to determine whether or not a signal is to be transmitted based on the transmission waiting state of said signal.

One of ordinary skill in the art would have been motivated to make this modification in order to increase network throughput, efficiency, fairness between nodes, and efficiency (Tanaka *et. al.*: Column 12 Lines 13-19).

4. Claims 10-11 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo *et. al.* in view of Tanaka *et. al.*, further in view of Hakkinen *et. al.*, U.S. Patent No. 6,567,459.

Regarding Claims 10-11 and 24-25, neither Kuo *et. al.* nor Tanaka *et. al.* expressly discloses the use of total power as a criterion in the determination of whether or not to terminate a burst transmission, nor the transmission of a plurality of burst signals in a predetermined order.

Hakkinen *et. al.* discloses a method involving power control and frequency hopping in a mobile communication system (Abstract, Column 3 Line 61 to Column 4 Line 13, Figs. 4-6). The received signal strength is compared to a preset reference



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power value, and the transmission power of each burst is adjusted on the basis of the power levels of the other bursts so that a lower total transmission power is maintained (Column 5 Lines 24-54, Fig. 5). The use of frequency hopping entails transmitting successive bursts in a predetermined order of frequencies (Column 2 Lines 40-55).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Kuo *et. al.* as modified by Tanaka *et. al.* by using total power as a criterion in the determination of whether or not to terminate a burst transmission, and by transmitting a series of burst signals in a predetermined order.

One of ordinary skill in the art would have been motivated to make this modification because the interference level in a wireless system is directly proportional to the transmitted power levels, and because the use of frequency hopping helps alleviate the effects of reflections and multipath propagation between the mobile unit and the base station (Hakkinen *et. al.*: Column 1 Line 66 to Column 2 Line 39).

5. Claims 36 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo *et. al.* in view of Tanaka *et. al.*, further in view of La Porta *et. al.*, U.S. Patent No. 6,763,007.

Regarding Claims 36 and 48, neither Kuo *et. al.* nor Tanaka *et. al.* expressly discloses the distribution of information among base stations.

La Porta *et. al.* discloses the forwarding of information from a first base station to a second base station, both base stations servicing the same mobile unit, said mobile

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unit undergoing a handoff from said first base station to said second base station (Column 25 Lines 8-20, Figs. 16a-b).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Kuo *et. al.* as modified by Tanaka *et. al.* by providing for the redistribution of information between base stations under certain circumstances.

One of ordinary skill in the art would have been motivated to make this modification in order to reduce disruptions when the mobile unit is handed off from one base station to another base station (La Porta *et. al.*: Column 2 Lines 9-25).

6. Claims 37 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo *et. al.* in view of Tanaka *et. al.*, further in view of La Porta *et. al.*, further in view of Chuah, U.S. Patent No. 6,469,991.

Regarding Claims 37 and 49, neither Kuo *et. al.*, nor Tanaka *et. al.*, nor La Porta *et. al.* expressly discloses the discarding of information, stored in a base station, that has not been transmitted to a mobile unit within a predetermined amount of time.

Chuah discloses a method for overload control in a multiple access communication system (Abstract, Column 4 Lines 46-57). Packets that have been stored at a base station for greater than a specified interval are discarded (Column 5 Lines 17-46).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Kuo *et. al.* as modified by Tanaka *et. al.* as modified by La Porta *et. al.* by providing for the discarding of information by a base

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station if a predetermined amount of time elapses without said information being transmitted to a mobile unit.

One of ordinary skill in the art would have been motivated to make this modification in order to reduce congestion (Chuah: Column 5 Lines 4-26).

### ***Response to Arguments***

7. Applicant's arguments with respect to Claims 1-2, 5-13, 15-28, 30-40, and 42-50 have been considered but are moot in view of the new grounds of rejection necessitated by Applicant's amendments, filed 27 June 2006.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew W. Genack whose telephone number is 571-272-7541. The examiner can normally be reached on FLEX.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-7541.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Matthew Genack

Examiner

TC-2600, Division 2617



6 September 2006



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SUPERVISORY PATENT EXAMINER  
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